GENDER, LAND TENURE DYNAMICS AND LIVELIHOOD: A Comparison of the Central and Volta Regions of Ghana Using Logistic Regression Analysis

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ABSTRACT

Binary Logistic Regression Analysis of secondary data were undertaken to compare the Volta and Central Regions of Ghana using gender as the key independent variable. The main hypothesis was that differences in the dynamics of land access, control and use in the study regions would be explained by gender inequities, manifested, in part, through the different systems of inheritance (matrilineal and patrilineal) which would further produce differences in livelihood, particularly income. Gender did not produce statistically significant effects, while region of residence was barely significant, only for control over land. All factors kept constant, the odds that respondents in the Volta Region had control over land were less likely than the odds for their Central Regional counterparts. Having access to land turned out to be the main determining variable for livelihood. The results could be explained by the finding that respondents used lineage land the least for their primary occupation. It points to the increasing alternative land tenure arrangements, which are not necessarily gender-dependent. This increasing overlapping land rights have implications for security of land ownership, use and control, and consequent repercussions for development, including food and income security.

KEY WORDS: Gender, Land Tenure, Access to Land, Development, Livelihood

INTRODUCTION

This paper entails a comparative analysis of land tenure dynamics and gendered access to, use of, and control over land in the Central and Volta Regions of Ghana. The overall objective was to examine the prospects and challenges presented by land tenure dynamics in the two regions for both males and females, with a focus on access to, use of and control over land, and to explore the implications of these variables for livelihoods.

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Gender was hypothesized as the key independent variable. Besides gender, region of residence was thought to influence how males and females would fare in relation to land tenure related issues. This was because broadly speaking, the dominant inheritance system in either study region (Central Region is mainly matrilineal while Volta Region is mainly patrilineal) was thought to influence the dynamics of access to and use of land, with repercussions for males and females. In Ghana, land tenure and administration face serious problems, which have exacerbated land tenure insecurity, with implications for national development (Aryeetey, Al-Hassan, Asuming-Brempong & Twerefou, 2007; Botchie, Akabzaa, Gyasi & Sarpong, 2007). Additionally, views and perceptions on land ownership reforms geared towards equitable land tenure were examined.

LITERATURE REVIEW

Land is a fundamental factor in development because of its role in the livelihoods of a majority of the population, and in sustainable agricultural development, economic growth and poverty alleviation. It is a key factor of production and a capital asset. As a natural resource, land is a livelihood asset from which people derive their sustenance. Thus, the importance of land as a national resource cannot be overemphasized. Recent economic research findings point to a positive relationship between more equitably distributed land and economic growth (Deininger, 1998). In spite of this, current debates regarding poverty and the development of poverty reduction programmes have paid little attention to issues related to land.

Land, Culture and Access

While several researchers (for example, Duncan & Brants, 2004; FAO, 2005; Keller, 2000; Mutangadura, 2004; Platteau, 1996; Velllenga, 1986) have drawn attention to gender inequalities in land tenure systems, others (such as Benneh, Kassanga & Amoyaw, 1995; Mwaipopo, 1994) have documented that there is no such problem in land tenure and that women's access to land is improving as a result of factors such as migration, education and economic change in rural communities. It is also argued that although men appear to be at an advantaged position in gender relations with respect to land, there is no discrimination or restriction of access to land based on sex for any purpose, whether for agriculture or for building houses. However, certain customary practices rob women of their rights to land use and these have to be changed (FAO, 1995).

One of the studies on gender and land rights in Ghana is the 1998 International Fund for Agricultural Development (IFAD) report on women's access to land in the Upper East Region of Ghana. The report identified the difficulty of enhancing women's land rights in the Region. It observed that although women supply 80 per cent of labor for farm activities, they have limited access to and control over resources such as land. Decision making on land is left to male village chiefs and elders as well as heads of clans at the community level. Women obtain temporary use of plots from

their husbands. Widows tend to lose access to land unless they have male children. Unmarried women seldom have access to land and women who gain access to land get the least productive and most distant plots.

Vellenga (1986) interviewed 100 women in two matrilineal Brong [9] towns and 40 women in five patrilineal Ewe [10] towns in Ghana. Among the matrilineal Brong farmers, 43 per cent of farms were purchased, whereas only 34 per cent of patrilineal Ewe farmers purchased their farms. Concurrently, only 33 per cent of matrilineal women received land from their matrilineage, whereas 58 per cent of patrilineal women inherited land from their fathers. Vellenga speculates that the differences in purchases between the two groups of women may come from different expectations in the two lineage groups regarding inheritance and giving of cocoa farms. Brong matrilineal women may pursue a more diversified strategy of farm acquisition since they have lower expectations of gaining land through their matrilineal ties. The lack of data on area, and the non-random nature of the sample make it impossible to treat these as anything more than preliminary hypotheses, but they do point the way to an understanding of the incentives and expectations that different systems of inheritance may provide for males and females.

Duncan and Brants' (2004) study was on men and women's access to and control of land in seven districts of the Volta Region of Ghana. Sixty per cent of the 300 respondents interviewed were women and 40 per cent of them were men. Their findings showed significant differences with regard to men and women's access to and control over land in the Region – while men had full access rights to land, women often had partial or conditional access rights.

Duncan and Brants (2004) further stated that ownership of land was largely vested in lineages, clans and family units and control over land was generally ascribed to men by lineage or clan heads. Some of the factors they identified to affect men and women's access to and control over land in the Volta Region include: gender, land ownership, the patrilineal inheritance system, local traditions and customs, decision-making powers, perceptions and marital status. They also noted in their study that land ownership has evolved from family ownership (e.g. acquired through allocation and inheritance) to individual ownership (e.g. through purchase and gifts) due to increasing population pressures, agricultural intensification and commercialization. This indicates that contrary to popular perceptions that land is primarily inherited, the dynamics of access to and control over land is changing; from group owned to individual ownership, with changes in the social structure. It also indicates that of late, inherent perceptions about land relations should not be taken simplistically.

[9] Brongs are a predominantly matrilineal ethnic group who hail from the central part of Ghana, currently living in the Brong-Ahafo Region of Ghana.

[10] Ewes are a predominantly patrilineal ethnic group who hail from the south-eastern part of Ghana, mostly living in the current Volta Region of Ghana, which shares borders with Togo.

Changing Access to Land

Although, it is believed that in most communities, women's access to land is guaranteed due to kinship ties as well as their position in marriage, there is a school of thought that access is changing over time and putting women in a disadvantaged position compared to men. Gray and Kevane (1992) attested to this fact when studying the land tenure system in sub-Saharan Africa. They observed that changing values of land affects women's access to land more than that of men. They stated that "as land increases in value, individual men and corporate groups dominated by men, including state authorities, find it in their interest to renegotiate and challenge, before traditional authorities and statutory bodies, the direct and indirect ties that support women's rights to land" (Gray and Kevane, 1992: 6).

Gray and Kevane (1992) also observed that women's customary access is lost through formal titling and registration. Women, particularly, rural women are severely restricted in their financial and social ability to gain land through government or market routes. This is because as observed in most of the literature, socially, women are comparatively disadvantaged in most of the land tenure arrangements. They are also generally poorer and are less likely to meet the requirements for having access to credit facilities, compared to men. Credit institutions tend to be male-dominated and discriminate against women on a cultural and social basis (Duncan and Brants, 2004). This fact is supported by research work by Kotey and Yeboah (2003) who observed the disadvantaged position of women in peri-urban areas as a result of competition for the limited supply of land between infrastructural development and agriculture.

One of the reasons for the land tenure differences is the different meanings applied to concepts such as discrimination, access and control. The failure to distinguish access from control leads to writers ignoring the fact that while women may have access to land, they often do not have control over the land. Change will require simultaneous struggles over property, the norms governing gender roles and behavior, and public decision-making authority. On one hand, this desired changed could lead to a state of anomie, for example, if change will require struggles and conflict, but it could also lead to positive livelihood changes, particularly for women. For example, women's increased primary rights to land could mean better access to credit facilities since they could use their primary titles to land for collateral security. Furthermore, some aspects of women's livelihoods will be more stable and not depend on their relations with men, for instance, whether married or not, women with primary rights to land can continue farming and not lose their lands if they became widowed. One interesting point associated with the issue of gender differentials in land access, use and control is the possible link to the feminization of poverty in Ghana. Women and children are the most vulnerable groups among the poor, with continuing high levels of female illiteracy, malnutrition among rural children particularly, and high infant and maternal mortality rates (Ghana Statistical Service (GSS), 2007a).

Land reforms in Ghana have been ongoing since the early twentieth century. Given current land-related challenges such as parallel land tenure systems and proliferation of land-related conflicts, recent on-going land reforms have focused on addressing fundamental problems plaguing land administration and land relations in the country. Stemming from the introduction of free market tendencies during Ghana's structural adjustment program in the 1980s, efforts have been geared toward ensuring land security amid radical measures to make land resources available for individuals for economic investment purposes, thus leading to some amount of privatization of land as well as managing the attendant side effects of these reforms. These recent reforms have included the development of a National Land Policy in 1999, the institution of the Land Administration Project (LAP) and the reorganization of the State land administration bodies towards a more efficient management of land. The objective of the National Land Policy is to address the fundamental problems plaguing land related issues in Ghana, while the LAP hopes to address the inadequacies plaguing the land administration system in the context of the policy actions contained in the land policy, including dialoguing with guardians and custodians of the traditional land tenure systems (Bortei-Doku Aryeetey, Kotey, Amponsah & Bentsi-Enchill, 2007; Ministry of Lands and Forestry, 1999).

These recent reforms have led to a proliferation of land management arrangements resulting in a plethora of land relations that lie side by side but also culminate into a property rights model which facilitates individual rights over land instead of usufruct or state ownership of land. This is thought to provide a level of security that is requisite for promoting private investment and economic growth (Bortei-Doku Aryeetey et. al., 2007). These recent reforms have also led to and/or support the increasing commercialization of land. The latter provides opportunities for women to overcome socio-cultural barriers to access to land (UNDP, 2007) but also has ramifications for access, control and ownership of land and consequent repercussions for engendering livelihoods.

Gender, Land Tenure Dynamics and Livelihood in Africa

In most African countries today, two main broad systems of land tenure run concurrent. These are the customary land tenure and western legal systems of land acquisition and management (Daley & Hobley, 2005; Mutangadura; 2004), with the former being widely used (Daley & Hobley, 2005). Gender is critical to understanding existing land tenure dynamics and livelihoods in Africa. The primacy of organizing land holdings within kinship institutions has had implications for men and women, with undeniable consequences for livelihoods. It has been rightly observed that within the tenet of mostly viewing males as household heads, women's relations with men in land-related issues and decisions have mostly accorded women secondary positions as wives, mothers, sisters and daughters, and hence secondary rights (Hilhorst, 2000; Platteau, 1996; Lastarria-Cornhiel, 1997). Platteau (1996: 40) notes: "In most traditional tenure systems, women do not inherit the land but are usually

allocated land for usufruct as wives in their husband's clan." Also, the lineage heads that control much of family land are male, as are the majority of stool occupants (Kotey and Tsikata, 1998).

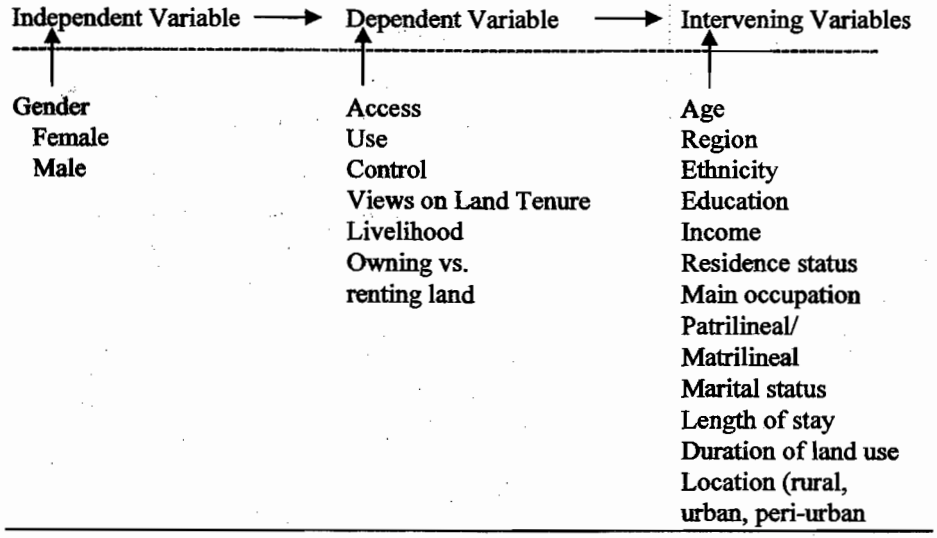
National policies may reinforce this disadvantaged position of women to land access and use by ignoring males and females' differential capacity for access to land (Agarwal, 1995). The rights of the principal landholders – men - have mostly been recognized, leaving women disadvantaged in gender land tenure relations (Golan, 1994; Platteau, 1996; Rugadya, Obaikol & Kamusiime, 2004).

The implications of this gender land tenure dynamics for livelihoods are enormous, yet marginalized. For example, agricultural productivity is affected (Abatania, 1990). In Mutangadura's (2004) six-nation study involving Lesotho, Zambia, Malawi, Botswana, Mozambique and South Africa, it was observed that land is the most fundamental resource to women's living conditions, economic empowerment and, to some extent, their struggle for equity and equality within a patriarchal society. In all the countries studied, more than 70% of women lived in rural areas and most derived their livelihood from agriculture. Yet, there was discrimination against them when it comes to independent ownership and control of land in both customary and statutory land tenure systems. In Ghana specifically, Duncan and Brants' (2004) study on men and women's access to and control of land in the seven districts of the Volta Region concluded that women's lack of control over land is a key factor in the chain reaction of gender disparities embedded in the economic system, such as impairing women's eligibility to obtain credit facilities. Thus, for most women in Sub-Saharan Africa, gender may be inextricably linked to access to and control over land, and thus livelihood.

THEORETICAL FRAMEWORK

The study adapted and used the theoretical framework proposed by Gelberg, Anderson and Leake (2000) known as the Behavioral Model for Vulnerable Populations (see Figure 1) to explore the interactions between the independent variable, gender, the dependent variables and the intervening variables. The model uses three categories of predictor variables to explain the actions individuals would take and resultant outcomes. Originally, the model was used to study access to and utilization of preventive health services for vulnerable populations in the United States. It is proposed that regardless of the respondents of this study's vulnerability status or otherwise, the model would explain the interaction between gender and the factors identified as the intervening variables to explain access to, use of, and control over land, livelihood and views on land reform. Through this framework, it was expected that the relationship between gender and the dependent variables will be mediated and moderated by the intervening variables.

Figure 1: Gender and Determinants of Land Tenure and Dynamics of Livelihood



Adapted from Gelberg et. al., 2000.

METHODOLOGY

Secondary data from the Central and Volta Regions from the Institute of Statistical, Social and Economic Research's (ISSER) Land Policy Reform in Ghana (LPRG) was analyzed. The original data were collected from all 10 regions in Ghana. The choice of the Central and Volta Regions was informed by their remarkable differences and similarities which would possibly impact the study variables. The differences are the main systems of inheritance, as described above, and ecological zones – the Volta Region spans across three ecological zones – from the south to the north of Ghana, with implications for land use and primary economic activities. In contrast, the Central Region is entirely in southern Ghana. In a country where the majority of the population lives off the land and in rural areas, these differences are relevant especially in terms of the primary activities, land use and livelihood.

On the other hand, both regions are regarded as southern regions (although, as mentioned above, the Volta Region stretches beyond the southern part of the country). Additionally, in both regions, fishing is an important livelihood activity. One critical similarity was that during the time of the data collection, July 2005, both regions scored high in the poverty rankings in the area designated as the southern part of Ghana, and nationally as well. The Central Region ranked the poorest region in the

south, while the Volta Region ranked third poorest. More importantly, according to the Fourth Ghana Living Standards Survey (GLSS 4), the Volta Region and Central Region placed 6th and 4th positions, respectively, in the poverty ranking nationally (GSS, 2000).

Research questions addressed were as follows: (1) What factors determine land access, control and use in both regions for males and females? (2) What role does region of residence, as proxy indicator for the dominant system of inheritance (matrilineal or patrilineal), play in land access, control and use for males and females? (3) What are the implications of land access, control and use for livelihood situations of males and females? (4) Are women now having access to land better than before? (5) What implications do the factors determining land access, control and use have for perceptions on land reform? (6) What policy implications do the results of the above stated questions have for Ghana?

It was hypothesized that gender and residence in either region would make a difference in the key variables of study and that gender differentials would exist in land access, control and use, leading to different dynamics of livelihood and wellbeing for males and females in the sample. Secondly, based on differentials in the main inheritance systems in the two regions of study, it was expected that region of residence would make a difference in land access, control and use, reinforcing the gender differentials. Differences in gender, access, control and use of land and related factors were thus expected to lead to differentials in perceptions of land reforms.

Study Areas, Sampling and Sample Selection

ISSER's LPRG Project adopted and modified the sampling frame of the GLSS 4 conducted in 2000 by the GSS because it was based on the 1984 Population Census list of Enumeration areas (EAs), deemed the best available by the time of ISSER's study. Based on this sampling frame, ISSER selected 46 Enumeration Areas (EAs) per multiple random sampling techniques for its national study. First, stratification was conducted based on key variables of ISSER's study such as geographic factors of location and ecological zones in Ghana, and indigene/migrant zones of EAs. Next, a two-stage systematic sampling process with probability proportionate to size of the stratification factors of interest to the 2000 households in an EA was done. All six hundred (600) respondents from ISSER's survey from the LPRG in both the Central and Volta Regions were used; half from each Region. Table 1 below gives information on the study districts and number of respondents per district.

Table 1: Study Districts and Number of Respondents

Region	District	Number of Respondents per District
Central Region	Twifo-Hemang-Lower Denkyira	60
	Assin North	60
	Agona Swedru	60
	Mfantsiman	60
	Cape Coast	60
Volta Region	Jasikan	50
	Tongu	50
	Ketu	50
	Krachi-East	50
	Hohoe	50
	Ho	50
Total	**11**	**300**

Source: Primary data from ISSER's Land Policy Reform in Ghana Research Project, July 2005.

Data Analyses and Management

The Statistical Package for the Social Sciences (SPSS) version 11.0 was used to analyze the data. Univariate and Binary Logistic Regression Analysis were conducted. Logistic Regression Analysis is complex enough to support important statistical conclusions required in serious academic research work (DeMaris, 1992; Healey, 1999; Pampel, 2000). The use of the

Binary Regression analysis dictated that most of the variables be measured dichotomously. Hence, the variables of interest were typically recoded as binary variables. Where necessary, two or more questions were combined to form a composite variable. These further afforded the opportunity to undertake the comparative analysis, such as for men and women, and for the two regions. For any variable used in the Logistic regression analysis, 1 denoted applicability (i. e., having the situation), and 0 denoted otherwise; for instance 'has control over land' = 1, and 'has no control over land' = 0. Throughout this study, statistical significance was determined at an alpha level of 0.1 due to the use of secondary data (European Commission, 2003; Thomas, Heck & Bauer, 2005).

Gender was used as the independent variable. Figure 1 specifies the dependent and intervening variables. Dichotomizing the variables meant that for instance, age was studied as young [18-40] and old [41 and above]; main livelihood activity/ occupation was used as land based--farming, fishing, etc, and other; ethnicity as (for the Central Region)—*Akan*, non-*Akan*/other; and (for the Volta Region)—Ewe, non-

Ewe/other; and income as high = above cedis 3,046,799.91, and low = cedis 3,046,799.91 and lower; based on an estimation of the GSS' poverty level or otherwise for July 2005 when the data were collected [11]. Although size and cost of farming and housing land could be important intervening variables, there were no entries for these in the original data. Six Binary Logistic Regressions were run to test for statistical relationships between the study variables as follows:

- Model 1—Access to land
- Model 2—Use of land for other purposes
- Model 3—Control over land
- Model 4—Livelihood
- Model 5—Expanded model on livelihood, and
- Model 6—Perceptions on land reforms

PRESENTATION OF FINDINGS

Socio-demographic background of respondents

Table 2 highlights the socio-demographic background of the survey respondents. Respondents from the two regions were predominantly males. This is due to the fact that for the survey interviews, heads of households, most of whom happened to be males, were purposively selected. The number of males from the Volta Region (241) was significantly higher than that for the Central Region (193). Without surprise, it can be observed that ethnicity for most of the respondents were largely dependent upon region of residence ($P \leq 0.001$). About 95 per cent of the survey respondents from the Central Region were Akan (non-Ewe) and about 96 per cent of those from the Volta Region were Ewe (non-Akan). It can be observed from Table 2 that the survey interviewees were predominantly resident in rural areas ($p<0.001$). Whereas in the Central Region, survey respondents were interviewed in rural, urban and peri-urban settings, in the Volta Region, they were interviewed in only urban and rural settings because the random sampling yielded no peri-urban setting.

There was not much difference between the age distributions of the survey respondents from the two regions, although those from the Volta Region generally appeared to be older than their Central Region counterparts. Their age distribution was symmetrical. The median age for all 600 of them was 48 years (minimum 18, maximum 96 years, range = 78, standard deviation (sd) = 15.501). The median age of the respondents from the Volta Region was 50 (range = 70, sd = 15.86) years and 45.5 (range = 78, sd = 14.93) years for those from the Central Region. Middle/Junior High School was the highest level of education for most of the respondents from the two

[11]Poverty line for 1998/99 = 900,000 cedis (GSS, 2000); exchange rate for 1999 = 2,669.300 cedis (UN, 2002); exchange rate for 2005Q3 = 9,036.47 cedis (GSS, 2006). Therefore, poverty line for 2005 = [exchange rate (2005Q3) / exchange rate (1999)]* poverty line 1999 = 3,046,799.91

regions (47.7 per cent for Central Region and 42 per cent for Volta Region). More respondents from the Volta Region than the Central Region had been educated, and had higher levels of education.

Table 2: Selected Characteristics of Survey Respondents by Region

Variable		Central Region		Volta Region	
		Count	%	Count	%
Total Respondents		300		300	
Location of interview	Rural	182	60.7	121	40.3
	Urban	58	19.3	179	59.7
	Peri-urban	60	20.0	0	0.0
Median age (years)	Males	193	45.0	241	50.0
	Females	107	47.0	59	48.0
	Total	300	45.50	300	50.0
Sex	Males	193	64.3	241	80.3
	Females	107	35.7	59	19.7
Level of Education	None	75	25.0	51	17.0
	Primary	43	14.3	43	14.3
	Middle/JHS	143	47.7	126	42.0
	Vocational/ Tertiary	39	13.0	80	26.7
Marital Status	Never married	15	5.0	25	8.4
	Married	216	72.0	225	75.3
	Separated	16	5.3	13	4.3
	Divorced	22	7.3	12	4.0
	Widowed	31	10.3	24	8.0
If married, lives with wife (wives)	Yes	199	90.5	199	87.7
	No	14	6.4	24	10.6
	Sometimes	7	3.2	4	1.8
Ethnicity	Akan (non-Ewe)	284	94.7	11	3.7
	Ewe (non-Akan)	16	5.3	289	96.3

Source: Primary data from ISSER's Land Policy Reform in Ghana Research Project, July 2005.

Results from Multivariate Analyses

Output from Binary Logistic Regression analysis is summarized in Table 3. Gender was not statistically significant, and region of residence was only minimally important, being statistically significant only for control over land ($p = 0.083$). Specifically, all other factors being equal, residents in the Volta Region were less likely to have control over land, compared to their counterparts in the Central Region. The odds that residents of the Volta Region had control over land were nearly one-third times less likely than the odds for their counterparts in the Central Region. Beyond this, region of residence was not statistically important for all other variables studied. However, although not statistically, significant, the interplay between region of residence and the main system of land acquisition was important; respondents who inherited land mainly through the patrilineal system were less likely to use land for purposes other than farming (refer to Model 1).

Additional key findings were that, with all other factors kept constant, having access to land was the most important factor that explained income and farming as a primary occupation. A test of the full model versus a model with intercept only was statistically significant, $\chi 2$ (11, N = 273[12]) = 22.999, (P = 0.018). The model was able to correctly classify 97% of those who had access to land: in (Odds for ACCESS) = 2.374(main livelihood activity, rank of importance of main livelihood activity, duration of main livelihood activity/farming, income from farming[13], number of years engaged in main livelihood activity/farming). More so, the effect of having access to land on an expanded livelihood model was incredible (see Model 5). Comparing the full model to the model with intercept only, the full model was discovered to be statistically significant at 90% confidence level χ^2 (14, N=264[14]) = 39.919 and p=0.00. The model was able to correctly predict 97% of respondents' livelihood: in (odds for [EXPANDED] LIVELIHOOD) = 3.326(ACCESS) – 3.438(recoded length of stay in community). The odds that respondents with access to land would earn a higher income and also farm primarily were nearly 28 times higher than the odds for those without access to land, as depicted by Model 5.

The reverse relationship was also true; there was a positive relationship between earning a higher income from farming and having access to land. All other variables held constant, the odds that people with higher incomes from farming would have access to land were over 10 times more likely than the odds for those without access to land (see Model 1). Income earned from farming had another important effect—the odds that respondents with a higher income from farming had control over land

[12] The sample size was 600 but there were 327 "missing" cases due to "not applicable" and "non-responses".

[13] Several variables, including main livelihood activity and income from farming, were captured to test their effect on having access to land.

[14] The total sample size was 600; however, the number of valid cases used in the modeling was 264.

were over three times more likely than the odds that respondents with a lower income from farming had control over land (Model 3), all else being equal. A test of the full model (for control over land) versus a model with intercept only was statistically significant, $\chi 2$ (12, N=352[15]) = 25.778, (p=0.012). The model correctly predicted 77.8% of those who had control over land. The model is therefore given by: in (odds for CONTROL) = -7.263 = 0.028(age) + 0.161(level of education) – 1.167(recoded region) + 1.199(farm income).

Findings from other important independent variables derived from the Models are as follows. For Model 3, age and level of education predicted the extent of control over land. As would be expected, respondents with higher levels of education (senior High School and above) and those who were older (aged 41 years and above) were more likely to have control over land. The odds ratio for age (1.028) indicates that when holding all other predictor variables constant, a one year increase in age made a person a little more likely to have control over land. Thus, as a person grows older, he/she is more likely to have control over land. The odds ratio of the predictor variable "educational status" (1.175) also indicates that, holding all other variables constant, a person with a high level of education was more likely to have control over land.

From Model 4, farming as a primary occupation and "income earned from farming" were used as a measure of "livelihood." Pitching the full model against the model with only the intercept was statistically significant χ^2 (11, N=354[16]) = 36.522, (p=0.00). The model was also able to correctly predict 96.3% of respondents' livelihood. The model is, therefore, given by: in (odds for LIVELIHOOD) = -2.871 (recoded length of stay in community). Without surprise, people with a shorter stay in their communities (less than five years) were also less likely to earn a higher income from farming, all else held constant. Furthermore, the effects of income earned from farming was also important for having control over land (refer to Model 3). All other things being equal, the odds that respondents with a higher income (above the poverty line) had control over land was over three times more likely than the odds that those living under the poverty line had control over land.

Comparing the expanded model on livelihood to the initial Livelihood Model, the expanded model (-2Log Likelihood = 45.165) proved to be better than the initial one (-2Log Likelihood = 81.334). This was because three more predictor variables were added in Model 5 (the expanded Model). These were "Access," "use of land for other purposes" and "control" over the land. Also, marital status and the main system of land acquisition mattered for using land for other purposes than the primary occupation (Model 2). In the test of the full model as against the model with only the con-

[15]The total sample size was 600 but "non-responses" and "not applicable" cases reduced the valid cases to 352.

[16] The difference of 246 was lost to "non-responses" and "not applicable."

stant term (i.e., the intercept), the full model was statistically significant χ^2 (12, N=352[17]) = 25.325, (p=0.013). The model correctly classified 63.9% of those who used land for other purposes. The Logistic Regression Model therefore is: in (odds for USE) = -0.479(recoded marital status) – 0.343(main system of land acquisition). All things being equal, the odds that respondents who were married by the time of the interviews used land for other purposes were less likely. Similarly, holding all other factors constant, the odds that a change in the main system of land acquisition (by the main inheritance system in the region of residence) would lead to the use of land for purposes other than the main livelihood activities were less likely.

Perceptions on Land Reforms

Neither gender nor region of residence was statistically significant for perceptions on land reform. Similarly, the Model on Perceptions on Land Reforms (Model 6) was not statistically significant. The full model was statistically insignificant at 90% confidence level χ^2 (15, N=206[18]) = 20.962 and p=0.138, when compared to the model with intercept only. The model was able to correctly predict 63.6% of respondents' views on land reforms. The model, therefore, looks like this: in (odds for VIEWS) = 0.739(CONTROL) + 0.13(education). Thus, this study did not lend support to the need for land reforms in the two study regions from what prevails currently. As has been established in the findings of this paper to this point, gender showed no statistical importance in the land tenure dynamics, and region of residence was only minimally important. Consequently, these independent variables were unable to shape views on land reforms.

Nevertheless, although not statistically significant, two variables of study were important for views on land reforms. First, holding all factors constant, the odds that respondents who had control over land would support a change in land tenure reforms were over twice more likely than the odds that those who did not have control over land would. This finding makes sense viewed from two angles. As mentioned, the respondents were primarily tenants and owners of land. Additional analysis from the data (not shown in this paper) indicated that respondents with control over land were interested in land reforms, such as titling and registration that would secure their ownership of the lands they had. This further supports the increasing interest in privatization of land. The reverse scenario was also true—respondents without control over the land they used did not have much to lose by not supporting land reforms. Second, respondents with higher education were more likely to favor land reforms than those with lower levels of education; as a person's level of education

[17] The sample size was 600, however, 248 cases were lost in this model due to "non-responses" and "not applicable"

[18] The total sample size was 600; however, the number of valid cases used in the modeling was 206.

increases by one year, he or she is more likely to be in favor of land reforms, all other factors being constant.

Table 3: Summary of Logistic Regression Analyses

Model name/ number	p value (of model)	Important predictor variables	Exp(B)	Effect of gender	Effect of region of residence
Model 1 (Access to land)	0.018	Income earned from farming	10.740	ns*	ns
Model 2 (Use of land for other purposes)	0.013	Marital status	0.619	ns	ns
		Main system of land acquisition	0.710	ns	ns
Model 3 (Control over land)	0.012	Age	1.028	ns	ns
		Level of education	1.175	ns	ns
		Region of residence	0.311	ns	Sig. (p = .083)
		Income earned from farming	3.318	ns	
Model 4 (Livelihood)	0.000	Length of stay in community	0.057	Ns	ns
Model 5 (Expanded livelihood [19])	0.000	Access to land	27.829	Ns	ns
		Length of stay in community	0.031		
Model VI (Perceptions on Land Reforms)	ns (0.138)	Control over land	2.094	ns	ns
		Level of Education	1.140	ns	ns

Source: Primary data from ISSER's Land Policy Reform in Ghana Research Project, July 2005. 1 *df*, 95% CI, alpha level = 0.1%; *ns means not significant

[19] Three additional predictor variables of access, use of land for other purposes and control over land were added to the variables used for Models 1 to 4 above.

DISCUSSION OF FINDINGS

The findings may be explained by the fact that in either region of study, land access in particular, and use and control of land were not mainly dependent on gender or the main systems of inheritance for our respondents. As affirmed already, this study was largely shaped on the premise of a popular perception that land in the two study regions is primarily accessed from one's lineage. Hence, the effect of gender and region of residence would be important in this wise only if lineage transfer of land prevailed and thus used the dynamics of gender opportunity or disadvantage and the main system of inheritance in a study region. However, this study has established otherwise—lineage access to land was the least among the respondents of this study. In fact, not more than an average of four per cent of the respondents in the study used lineage land for their primary occupation.

Rather, several other forms of tenancy such as the *abunu*[20] and *abusa*[21] traditional systems and outright purchase prevailed primarily. Results from the bivariate analysis showed that in both study regions put together, traditional and cash-based land arrangements covered 98.6 per cent of land transactions in both regions. Foremost, people were tenants (*abunu, abusa* and those resourced through providing customary drink [22] were 58.6 per cent in the Central Region and 68.6 per cent in the Volta Region), followed by personal ownership/cash tenancies (39.2 per cent in the Central Region and 31.4 per cent in the Volta Region).

Thus, these arrangements and particularly an increasing outright sale of land which depends largely on ability to pay may not differ between the two regions, and between men and women. Information from ISSER's LPRG national qualitative data from the focus group discussions indicated that in most places in Ghana, landlord-tenant transactions are neither based on gender nor traditional inheritance systems. Rather, they are based on perceived ability of the tenant farmer to diligently make use of the land and more so, proof him/herself honest in the agreement between the two parties (ISSER, 2005).

These findings support previous research that there is an emerging commoditization, commercialization and personal acquisition of land (Bortei-Doku Aryeetey, et. al., 2007; Duncan & Brants, 2004; UNDP, 2007), with a trend of reduced emphasis on

[21] A local land tenure arrangement by which the yield from a farm is divided into two equal parts and shared between the land owner and the tenant farmer.

[22] A local land tenure arrangement by which the yield from a farm is divided into three parts and the land owner or the tenant farmer may take one part or two parts with the remaining part going to the other party.

[22]In this way of resourcing land for use, a tenant provides some drinks as a token for the price of the land. Exchanging the drinks also signifies a mutual agreement for the release of the land between the two parties involved.

group (lineage) ownership of land. This emerging trend also has implications for ability to pay for/buy land and also the ability to sell land by individuals, supporting the increasing commercialization of land, and without being biased necessarily toward one particular gender. Increasing personal acquisition and ownership of land may mean that people are increasingly earning enough to be able to personally acquire land. This is supported, for instance, by the declining poverty trends in Ghana between 1991/92 and 2005/06. For Ghana as a whole, in 1991/92, the proportion of the population living below the poverty level was 52 per cent, 39.5 per cent in 1998/99, and 28.5 per cent in 2005/06. In line with this, the proportion of the extreme poor was a little over 36 per cent in 1991/92, 26.8 per cent in 1998/99 and 18.2 per cent in 2005/06. More importantly, the decline in poverty from 1998/99 to 2005/06 was more evenly distributed than it was in the period between 1991/92 to 1998/99. With the exception of the Greater Accra and Upper West Regions, all the localities and regions experienced decline in poverty. In the study regions for example, the Central Region had a general poverty incidence of 44 per cent to 48 per cent to 20 per cent from 1991/92 to 1998/99 to 2005/06, respectively. The Central Region for instance moved from being the 4th poor nationally in 1998/1999 to the 4th lowest poor in 2005/06. On its part the Volta region had general poverty incidence of 57 per cent to 38 per cent to 31 per cent respectively in the three periods under review. Furthermore, over the period under review, the reduction in poverty was consistent for both urban and rural areas of the country and also by the main economic activities during all three time periods of measurement.

Moreover, by gender, female headed households were better off than male-headed households over the period under review, although both groups had a 24 per cent reduction in poverty incidence. For male-headed households, poverty declined from 55 per cent in 1991/92 to 41 per cent in 1998/99 to 31 per cent in 2005/06. For female-headed households, poverty reduced from 43 per cent to 35 per cent to 19 per cent, respectively, in the three periods under review. This reduction in the overall poverty incidence implies general reduction in vulnerability, at least income-based vulnerability for the country as a whole (GSS, 2007b; UNDP/Ghana, 2007).

Increasing personal ownership of land also means that persons are more able to sell of land without the consent of other persons, such as lineage members. These issues move the important variables of this study from access to having the ability to acquire land through having the financial resources for being a player in the increasingly commoditized land market, and thus to control and ownership of land. Other important variables in this study that moderated and mediated between gender and the dependent variables are being older, having a higher level of education, being married and living in a community for longer than five years. Independently, these variables have the potential of boosting one's ability to personally own land but also they further combine with a higher income status to lead to the same effect. Yet, the increasing inequities in fiscal wellbeing particularly since 1998/99 (GSS, 2007b; UNDP/Ghana, 2007), also mean that as found in this study, those with higher incomes have a higher ability to have control and ownership of land.

The case for this study in relation to engendering livelihoods is that recent land reforms in Ghana, coupled with the broad-based on-going poverty reduction in the country have facilitated individual rights to land, beyond access, to control and ownership. This supports the paradigm shift of increasing commercialization of land. The implications of these are that the increasing individual ownership and control over land would promote private investment in land. This suggests an increasing tendency for people to engage in land based livelihood activities such as farming, and to earn higher incomes from these livelihoods, due to the increased security in land holdings. More importantly, in general, this challenge to the status quo is not limited to men or a particular ethnic group. For women in particular, these recent social changes provide opportunities for changing the hitherto socio-cultural barriers to access and particularly to own and control land. This implies broader land-based livelihood opportunities for both males and females.

Thus, in this study, the intervening variables rather than the independent variable (gender) mostly affected the dependent variables (access, use, views on land tenure, etc). The primary importance of these background variables in determining livelihood issues is stronger than gender per se. This is critical for refuting existing claims (the status quo) about the relationship between gender and land tenure since these moderating variables have implications for the gendering of livelihoods. For people who were older, richer, married (possibly meaning a higher combined household income), and more educated, livelihood issues seemed driven the more by these background factors rather than they were for gender per se.

Consequently, being male or female and/or region of residence in either region of study may not critically determine land access, use and control. Although in this study, access to land was overwhelmingly important for livelihood (measured as a proxy indicator based on farming as a primary occupation, and income earned from farming), the reverse need not be true – farming as a main occupation and income earned from farming or otherwise need not primarily determine access to and use of land, and possibly, control over land. In fact, access to and use of land does not necessarily mean ownership of land. Thus, for the residents of the two study regions, if not of Ghana as a whole, land relations may be assuming trends different from the status quo. Secondary and/or derived and overlapping rights to land which were mostly contract-based leading to conditional use of land, and also market-based ones were increasing. Thus, in general, land relations are changing, and more importantly, these are not primarily gender-based.

Moreover, historical trends such as the passing of land-related laws which are geared toward equity in land relations, such as the Interstate Succession Law (Provisional National Defence Council Law 111) and increasing civil society activity in favor of women on one hand and also on land tenancy may be seriously eroding inherent land-based relationships, paving the way for new ones. Presumably too, there is rising educational attainment and often consequent income-earning opportunities for women in these two regions. These, coupled with the impact of migration, particu-

larly supported by the increasing education and overall social mobility of females in Ghana may have increased their opportunities to have access to and control over land. These suggest that gender per se or ethnicity in the Central and Volta regions may, to some extent, be losing their discriminatory power in determining access to, use, ownership and control over land and as a result, livelihood, for males and females.

IMPLICATIONS FOR DEVELOPMENT

The findings above have both developmental and policy implications. Tenurial security and livelihood come to the fore. The findings of this study may imply attendant risks to land and livelihood security, and risks to the maintenance of and investment in land. For instance tenancy-based land agreements may not be secured for both the tenant farmer and for the land owner in the face of increasing overlapping land rights. As findings from a qualitative component of this study (not reported here) revealed, land owners are interested in protecting their position and tenant farmers are interested in doing same. Additionally, given that trust-based arrangements are difficult to guarantee vis-a-vis the norm that tenurial arrangements basically depend/thrive on mutual trust between land owners and tenant farmers, the effect of the increasing tenancy on the livelihood of land owners and also tenants are significant. On the one hand, land owners may end up being too protective of their land and may be unwilling to give such lands out through tenancy arrangements, if there is cause to suspect that their right to the land cannot be secured. In this case, the livelihood of both the land owner and tenant will be negatively affected.

Additionally, these 'open-ended' issues of trust will obviously lead to increased insecurity in land ownership, access, use and control. Increasing land tenancy will imply increasing land litigation in the wake of which there will be the need for increasing formal legal documentation on land and land transactions. The alternative scenario to this will be increasing legal battles between parties to such trust-based land related arrangements. In the long run these will affect farming, types of crops grown, food production, food availability, feeding and nutritional status, employment, and livelihood in general and development of the nation as a whole. Further, these have the potential of paving the way for increased food importation. The culminating effect of these is that the poor and vulnerable in the Ghanaian society, most of whom are primarily dependent on land for their livelihoods, particularly women and children, will become more marginalized.

These critical issues raised above have very important implications for the LAP, for instance. Critical among the issues stemming from this study that the LAP and other agencies such as the National Development Planning Commission (NDPC) may need to attend to is to factor in the recent findings of land tenure related issues from ISSER's LRPG and other related studies on the on-going poverty reduction efforts and macro-economic growth initiatives. In addition, given that the mass of Ghanaians are dependent on land for their livelihoods, and there are more female farmers than

males, informed initiatives towards shaping (gendering) of agrarian livelihoods are called for, particularly in the wake of Ghana's bid to become a middle income country soon.

Two alternative explanations to the findings of this study are also plausible. First, as already stated above, there were relatively few female respondents. The Volta Region for instance had less than one-fifth (19.7 per cent) of the interviewees being female. In the Central Region, a little more than a third of them (35.7 per cent) were females. Having too few women compared to men may have a statistical effect on the findings with respect to gender. Secondly, it is possible that in spite of the fact that more women were involved in land-based activities than men, given society's ascribed gender roles, there is insignificant demand for land by females for farming (UNDP, 2007) to allow for the confirmation or otherwise of the hypotheses of this study. Univariate analysis not shown in this paper indicated that in general, women were more likely to experience difficulties accessing land, were less successful in acquiring land, and had less secured land tenure transactions, compared to men.

CONCLUSION

Models from the Logistic Regression Analysis indicated that access to land, use of land for purposes other than farming, control over land and livelihood were important dependent variables, while perceptions of land reform was not. Having control over land and having a higher level of education, understandably, were important for one's view on the need for land tenure reforms.

More importantly, however, gender did not critically explain access to, use of, and control over land. Although gender may be important, this study did not capture its nuances with respect to access to, use of and control over land, largely because contrary to a key assumption for this study, too few of our respondents were using lineage land for their livelihoods. Alternatively, the decreasing poverty levels leading to increased ability to buy/pay for land, coupled with the gains of the recent land tenure reforms are eroding barriers to accessing, and particularly to owning and controlling land with their concomitant effects on the livelihoods of males and females provide an important framework for the findings of this study. Thus, gender did not determine livelihood. Rather, having access to land overwhelmingly determined livelihood. Compared to people without access to land, those with access to land were nearly 28 times more likely to farm as a primary occupation and also earn higher incomes than those without access to land. An expanded livelihood model in which several factors were considered provided a better model empirically for livelihood than a limited model with few variables. Although plausible, there was no empirical support from this study to indicate that the female respondents were having access to land better than used to be the case. Given that the sample was representative, the findings of this study have very critical policy implications for the two study regions, and possible repercussions for the country as a whole. The LAP and the NDPC can initiate some of the recommendations enumerated below.

Since the respondents of this study were mostly depending on tenancy-based access to and use of land, it is recommended that the government streamlines land tenancy agreements to ensure a more secured access to and use of land, to promote sustainable livelihoods. Furthermore, given the emerging importance of commoditization and personal acquisition for access to and use of land in the study regions, if not the whole of Ghana, education on land title registration should be increased, with increased efforts to reduce the current bottlenecks with getting a title to one's land. It is proposed further that there should be legislation on share cropping to increase security of both tenant farmers and original land owners.

Further studies should be conducted, possibly using primary data, to determine the specificities of the emerging land relations and their implications for development, including an emphasis on the effect of gender, particularly, given society's ascribed gender roles and the effect this may have on demand for land for farming by females. For instance, the extent of women's access to land based on matrimonial relationships and the security of this could be explored. The impact of increasing legislation and civil society activity on land relations would be worth exploring. Gender-based implications of land tenure systems for poverty reduction in the regions of study should also be explored.

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